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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,879	10/23/2003	Cheah Chiang Sun	70020777-1	1934
57299	7590	04/21/2006	EXAMINER	
AVAGO TECHNOLOGIES, LTD.			BODDIE, WILLIAM	
P.O. BOX 1920			ART UNIT	
DENVER, CO 80201-1920			PAPER NUMBER	

2629

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/692,879	<b>Applicant(s)</b> SUN, CHEAH CHIANG	
	<b>Examiner</b> William Boddie	<b>Art Unit</b> 2629	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badyal et al (US 6,151,015) in view of Howard (US 6,097,374).

**With respect to claim 1**, Badyal discloses, a pointing device (fig. 1) comprising:

an elongated body (102 in fig. 1) having a transparent end (122 in fig. 1; col. 3, lines 23-24) adapted for movement over a surface (clear from fig. 1);

an illumination subsystem (104 in fig. 1) that illuminates said surface in an area adjacent to said transparent end (col. 3, lines 26-30);

an imaging subsystem (108 and 110 in fig. 1) that forms images of a portion of said surface in said area (col. 3, lines 26-30);

a controller (col. 4, lines 44-46) that periodically compares two of said images.

Badyal does not expressly disclose, a reference mark system or that images are compared based on the amount of rotation.

Howard discloses, a reference pointing mechanism (fig. 8b) that defines a direction (direction of gravity) that is independent of the rotations of a body, and that compares two images based on their amount of rotation (col. 8, lines 49-54).

Howard and Badyal are analogous art because they are both from the same field of endeavor namely, cursor control devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the gravity reference pointing mechanism and detection method of Howard in the pen mouse of Badyal.

The motivation for doing so would have been allowing more flexibility to the user and allow rotation of the pen within their grasp (Badyal; col. 3, lines 53-55).

Therefore it would have been obvious to combine Badyal with Howard for the benefit of user flexibility when using the device to obtain the invention as specified in claim 1.

**With respect to claim 2,** Badyal and Howard disclose, the pointing device of claim 1 (see above).

Howard further discloses, wherein said reference mark system comprises:

a disk that is free to rotate about an axis through said disk (75 in fig. 8b), said disk comprising a reference mark (76 in fig. 8b) that is displaced from said axis, said disk having an orientation mechanism (76 in fig. 8b) that maintains said disk in a fixed orientation relative to the earth (col. 8, lines 42-47); and

a sensor for determining the location of said reference mark relative to said elongated body (72-74, 77-78 and 29 in fig. 8b; col. 8, lines 42-57).

**With respect to claim 3,** Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said orientation mechanism comprises a weight (76 in fig. 8b) on said disk, said weight being displaced from said axis (col. 8, lines 45-46).

**With respect to claim 5,** Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said sensor comprises an optical system (77-78 and 29 in fig. 8b) for projecting an image of said disk into said imaging subsystem (col. 8, lines 42-57).

**With respect to claim 6,** Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said sensor comprises a reference mark sensor (77-78 and 29 in fig. 8b) that measures the orientation of said disk relative to said elongated body (col. 8, lines 42-57).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Badyal et al (US 6,151,015) in view of Howard (US 6,097,374) and further in view of Blonder (US 5,620,371).

**With respect to claim 4,** Badyal and Howard disclose, the pointing device of claim 2 (see above).

Neither Badyal nor Howard disclose, wherein said orientation mechanism comprises a magnet attached to said disk.

Blonder discloses, a cursor control device that teaches the use of a bar magnet (145 in fig. 4) attached to a sphere to always orient the sphere towards magnetic north (col. 3, lines 1-7).

Blonder, Badyal and Howard are all analogous art because they are all from the same field of endeavor namely cursor control devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the weight of Howard and Badyal with a magnet as taught by Blonder.

The motivation for doing so would have been for use when a gravity dependent system would be ineffective, such as movement perpendicular to the force of gravity.

Therefore it would have been obvious to combine Blonder with Howard and Badyal for the benefit of increased flexibility in the use of the device to obtain the invention as specified in claim 4.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoshino (JP 55-136464) discloses an input pen with a freely rotatable writing body. Childers (US 5,079,845) discloses a magnetic compass with an analog/digital conversion system using optical means. Cho et al. (US 6,897,854) discloses an input pen having rotation detection means.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wlb  
4/18/06

AMR A. AWAD  
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written over the printed name and title.